

MMS Alaska OCS Region

Focus Sheet

Marine Mammals and Oil-Industry Noise

The effects of seismic exploration and other oil-industry noise and disturbance on marine mammals in Arctic Alaska have been a concern to many. The MMS Alaska Region continues to address the issue in many ways.

MITIGATION: The MMS grants open-water seismic permits that restrict exploration when bowhead whales are nearby. As part of an offshore lease in the Beaufort Sea, we require oil companies to limit the potential effects of noise on marine mammals. Such measures from past sales include:

A stipulation (“Industry Site-Specific Bowhead Whale-Monitoring Program”) to measure any behavioral effects on bowhead whales.

A stipulation (“Conflict Avoidance Mechanisms to Protect Subsistence Whaling and Other Subsistence Activities”) requiring the oil industry to consult with potentially affected communities and the Alaska Eskimo Whaling Commission (AEWC) to prevent unreasonable conflicts.

Due to technical advancements, the oil industry uses fewer platforms and relies on extended-reach drilling (directional drilling). Today’s use of 3D seismic arrays allows for smaller-scale prospects and fewer delineation wells (smaller “foot print”).

MMS STUDIES: Since 1979, MMS studies addressing the key issue of noise effects on bowhead and beluga whales, and other marine mammals include:

1979-present: For more than 20 years, we have monitored the migration of bowhead, and beluga whales in the Beaufort Sea. Each year, our MMS Bowhead Whale Aerial Survey Project (BWASP) gives us and the National Marine Fisheries Service (NMFS) daily reports on fall bowhead migrations that we use to help regulate seismic and drilling operations. Project analyses help ensure that oil industry activities do not pose a serious, irreparable, or immediate harm to the species or harm to other marine mammal populations (e.g., OCS Study MMS 98-0059).

1991: “Effects of Noise on Marine Mammals” (OCS Study MMS 90-0093).

1995: “Acoustic Effects of Oil Production Activities on Bowhead and White Whales Visible During Spring Migration Near Pt. Barrow, Alaska-1991 and 1994 Phases: Sound Propagation and Whale Responses to Playbacks of Icebreaker Noise” (OCS Study MMS 95-0051).

1997: We held an Arctic Seismic Synthesis and Mitigating Measures Workshop in Barrow, Alaska (OCS Study MMS 97-0014). Subsistence whaling captains and management agencies worked together to define noise issues that we're responding to:

Traditional knowledge of the whaling captains about bowheads changing course 35 miles east of seismic vessels and moving 30 miles north of their usual path was defined and referenced.

We're funding "Reference Manual and GIS Overlays of Oil-Industry and Other Human Activity (1970-1995) in the Beaufort Sea". The study catalogs offshore noise for comparing with bowhead whale distributions.

The NMFS, MMS, AEWC, and North Slope Borough, meet each year to help design oil-industry studies on the effects of seismic operations on bowheads.

Oil-industry scientists use MMS BWASP data to check for displacement of whales far to the east, north, and west of seismic operations.

1999-present: Ongoing or proposed bowhead whale, polar bear, ringed seal, and other marine mammal studies in the MMS Alaska Annual Studies Plans further address noise and disturbance issues.

Through interagency agreements with USGS Biological Resources Division, Alaska Department of Fish and Game, and the Coastal Marine Institute (CMI) of UAF, MMS co-funds the following ongoing studies that address disturbance and other effects on polar bears, ringed seals, and other marine mammals in the Beaufort Sea Planning Area:

"Polar Bear Den Surveys" using Forward-Looking Infrared Radar (FLIR) imaging devices from aircraft to locate occupied dens prior to seismic surveys in order to prevent disturbance of female bears and cubs.

"Monitoring Key Marine Mammals in the Arctic (Ringed Seals)": by conducting aerial surveys during the spring to estimate abundance and density of seals in oil development areas and to compare them with non-development areas to try to determine if seals have been displaced by industrial noise and disturbance.

Develop a "correction factor" for "Ringed Seal Surveys in Northern Alaska" to provide a method to determine when is the best time to do aerial surveys of ringed seals and estimate the number of seals that are being missed or not counted during the surveys. This information would help in accurately determining if and how many seals were displaced in association with offshore oil and gas activities.

"Post-Summering Distribution and Movements of Arctic Beluga Whales": This study provides information on seasonal movements and diving behavior of the Chukchi Sea and eastern Bering Sea beluga whales during the summer-fall season when the whales leave summer coastal concentration areas. This information is important in assessing potential effects on the whales from oil and gas exploration and development activities.

"Alaska Frozen-Tissue Collection" and electronic database from a variety of species provides a source of tissues for analyzing contaminant levels in Arctic animals that are important subsistence resources.

"Alaskan Marine Mammal Tissue Archival Project" provides for the collection, storage, and analysis of marine mammal tissues from important subsistence species that determine levels of heavy metals, petroleum aromatic hydrocarbons (PAH's), and other contaminants that are known to occur in the Arctic.

INDUSTRY MONITORING: In addition to MMS studies, the offshore oil-and-gas industry monitors potential site-specific noise effects to comply with the Marine Mammal Protection Act and Endangered Species Act and to obtain Incidental Harassment Authorizations.

All marine mammals in U.S. waters are protected under the Marine Mammal Protection Act (MMPA) of 1972. In the Act, Congress declared that marine mammals "be protected and encouraged to develop to the greatest extent feasible commensurate with sound policies of resource management, and that the primary objective of their management should be to maintain the health and stability of the marine ecosystem."

All the above efforts sum up to an extensive knowledge base and protective system for assuring minimal effects on bowhead and beluga whales, ringed seals, and other marine mammals due to OCS activities.

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For Further Information

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